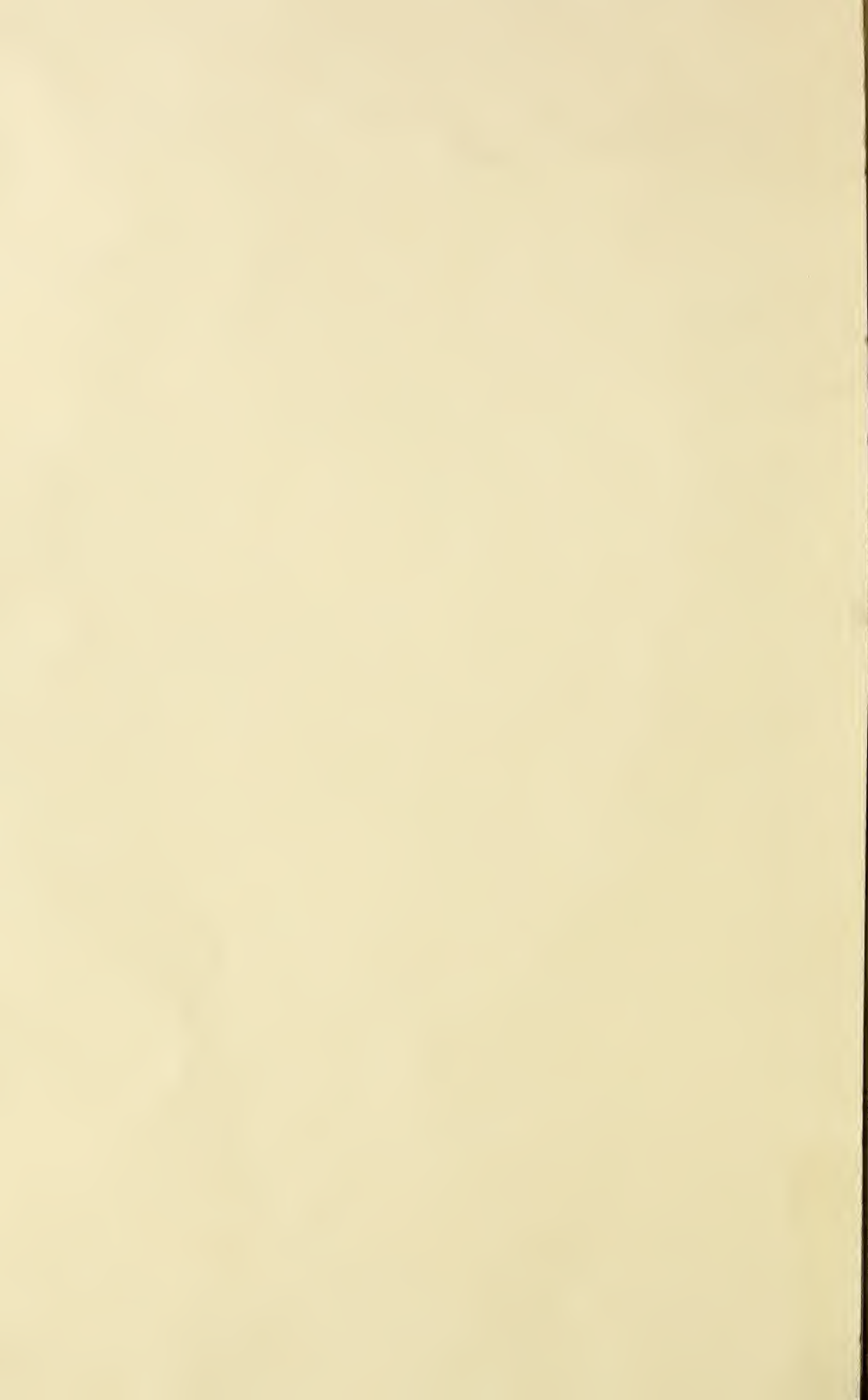


Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.



The Agricultural Student.

Published monthly by

The Agricultural Student Publishing Co.

TERMS.

One Year,	\$.50
One-Half Year,	.30
Single Copies,	.05

While this paper is published with the consent and approval of the President of the University, and the officers of the School of Agriculture, the editors of this paper are alone responsible for the statements in all unsigned articles.

Address all communications to the Editor and Manager, Agricultural Student, Columbus, Ohio.

Entered at the Postoffice, Columbus, O., as second class matter.

BOARD OF EDITORS.

CHARLES W. BURKETT,	Editor and Manager
JOHN F. CUNNINGHAM,	Ass't Manager
MURRAY M. RARICK,	Circulation Manager
R. W. DUNLAP,	Alumni Editor
D. A. CROWNER,	Dairy Editor
FRANK RUHLEN,	Swine Editor

WITH this issue we come out in a special edition of THE AGRICULTURAL STUDENT for the Farmers' Institutes. Fifteen thousand copies will be distributed at the several Institutes, free.

The free distribution is not made for the purpose of getting subscribers, but if any reader desires the paper for a year he can have the same for fifty cents.

No; the surplus from the football games (if there is any) we do not intend to use to pay our printing bills. If you have had that erroneous impression, we wish to correct it. We still intend to rely upon the good faith of our subscribers. They, of course, know that we have a higher aim in life than to publish our wit, sarcasm and instructive and interesting information at our own expense. We are willing to be the servants of the students and the public, but we have not the slightest objections to each of these classes helping to pay the bills.

WE hear much about the in coming 20th century that is going to be such a great one in the civilization of the world. Without a doubt every phase of humanity will be raised, every class of people benefited and every industry and profession exalted, but none more than agriculture. The coming 20th century is going to be the golden age of agriculture. Just as the present century is the age of invention and electricity so will the incoming century be the age of agriculture. We see it in every condition. We see it in every phase of farm life. The farmer is becoming educated. He is becoming independent. He feels his power. He knows his strength. He is beginning to comprehend his mission. The dawn is approaching. The night of hard labor, ignorance and encroachments has nearly past, and with the first beams of the light the farmer will arise, be early in the field, reaping of triumphs and victories before the rest will comprehend the situation. Take cheer, all ye who begin to lose faith. Despair not, for victory is near at hand. Your day is coming. Your race is yet to be run. Hear the shout! It is here! *Vive le fermier.*

THE College Mirror, published by the students of the Oklahoma Agricultural and Mechanical College, speaks in the most complimentary terms of Prof. G. E. Morrow, recently elected as president, professor of agriculture and director of the experiment station.

The college begins the year with an enrollment of 125 students, more than is in attendance at either the Normal or the University of the Territory.

President Morrow is a man of unusual attainments in many lines of thought. He has great breadth of knowledge in educational matters in general, and is considered as a high authority on questions pertaining to agriculture. His many friends at

O. S. U. congratulate both him and the college on the appointment, and wish both all the success possible.

THE initial dairy article of the STUDENT spoke about the use of the bull for hauling manure, soiling crops and any little jobs for which a horse would be used. We have used our Short-horn bull for such work for more than a year. We like him better each day. He is so handy, always ready, goes where we want him to, and is a real gentleman as compared with those boisterous fellows one generally sees around the dairy.

THE *Globe*, one of the oldest daily newspapers of London, England, publishes quite a long abstract of Prof. Lazenby's paper on "Manual Training in Horticulture in Our Country Schools."

Judging Cattle.

The interest taken in the School of Agriculture of the Ohio State University is shown by the liberal offer made by W. B. Smith & Son, Columbus, Ohio, the well-known breeders of Holstein-Friesian cattle.

This firm offers the students in agriculture who are studying the breeds of live stock six money prizes for the best work in judging cattle. Nine cows have been selected from their herd for this purpose, as follows: Adventuress 3rd, Flossy Dill, Hilton Maid 2nd, Iolena of Fairmont, Nancy Dewdrop 2nd, Peterina 2nd, Vasalene, Verbelle May and Verbelle Lass.

Breeders of dairy cattle will recognize that this list is composed largely of cows which are prize winners in the show ring, the milk test, or both, this firm having won prizes in both departments of the Ohio State Fair for several years past as well as at other State Fairs. These cattle furnish a rare opportunity for study.

The junior member of the firm, Mr. E. F. Smith, who is himself a shrewd judge of cows whether owned by his firm or by another, proposes that after each animal has been scored, the relative money value of each animal be indicated, age and breeding considered.

The students' works in judging these cattle will be passed upon by a competent judge of dairy cattle. It is expected that Mr. A. T. Dempsey will act in this capacity.

The Agricultural Lecture Course.

The course will be opened by President Canfield on Thursday, Nov 14, at 3.30 p. m., on the Use and Abuse of the Forest. An interesting list of lectures is being arranged.

Do You Wish to Learn the Science and Art of Butter and Cheese Making?

If so, there will be an opportunity at the Ohio State University during the Winter term of 11 weeks, beginning January 8, 1896.

The instruction will consist of lectures upon the breeding, feeding, and judging of dairy stock; the diseases of the cow; the chemistry of milk; the effect of bacteria and other agents upon milk and its products; and similar subjects.

The laboratory or dairy-room practice will comprise the testing of milk as to purity and fat-content; the use and care of centrifugal separators and other dairy devices; the making of butter and cheese by the most approved methods; in short the details of creamery, factory and home dairy management.

All of the above mentioned work in detail, will be repeatedly performed by the student under the guidance and direction of competent instructors.

No one who is desirous of achieving success in butter or cheese making, or who wishes to become fitted for the

position of manager or superintendent of a creamery, should miss this opportunity for instruction and training. The expenses are moderate.

A circular containing further information will be sent upon application to
WM. R. LAZENBY, Sec'y,
School of Agriculture.

Dairy School—Schedule of Studies.

Dairy Farming—Two hours each week. Lectures and recitations on breeds, breeding, feeding, selection and judging of dairy stock; equipment and management of dairy farms. Professor T. F. Hunt.

Butter and Cheese Making—Four half days each week. Laboratory practice in running separator, churning, working butter, making cheese, milk testing, etc. Professors H. J. Noyes and W. D. Gibbs.

Butter and Cheese Making—Two hours each week. Lectures and recitations. Professors T. F. Hunt and H. J. Noyes.

Milk Chemistry and Milk Testing—Two hours each week. Lectures and laboratory practice. Professor H. A. Weber.

Bacteria in their relation to Milk, Butter and Cheese—Two hours each week. Lectures and laboratory practice. Professor A. M. Bleile.

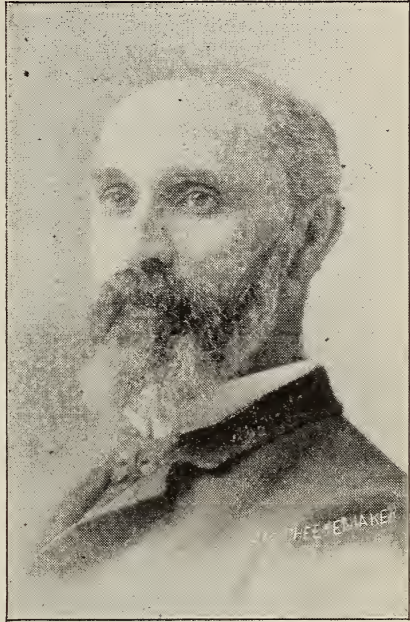
Diseases of the Cow—Three hours each week for six weeks. Dr. D. S. White.

Care of the Boiler and Engine—One lecture each week during six weeks. Mr. W. C. McCracken.

In addition to the above there will be a course of special lectures by prominent dairymen and others.

Good bedding and lots of it—and that well used—means a great many good things to the common dairyman: Good manure, clean stables, sleek cows with clean udders.

Assistant Professor of Dairying.



H. J. Noyes, Richland City, Wis., has been appointed chief instructor in butter and cheese making at the Ohio State University, with the title of Assistant Professor of Dairying, in place of Professor Goodrich, who resigned to devote his whole time to his private interests.

Professor Noyes was born in April, 1852, at Richland, McHenry county, Illinois, and spent the first twenty-one years of his life on the farm. He has been in the butter and cheese making business for twenty-two years, having operated factories at Lawrence, Ill., and Poynette and Dixon, Wis. Since 1888 he has owned and operated a combined cheese and butter factory at Richland City, Wis., having lately purchased a second factory at Basswood. The capacity of these two cheese factories is 24,000 pounds of milk daily.

Professor Noyes is a careful student and has given much time and attention to the study of scientific and practical dairying. He has done as

much, perhaps, as any other man toward advancing dairy interests in Wisconsin and in the country generally. His worth has received recognition at the hands of dairymen everywhere, having been twice elected treasurer of the Northwestern Factory Cheese Makers' Association, and in February, 1891, was elected as the president of the National Butter and Cheese Makers' Association.

During the winters of 1892-3-4 Prof Noyes was employed as chief instructor in the creamery department of the Wisconsin Dairy School at Madison, and through his energy did much to help give the school its present high standing. During the past season he was employed by the State Dairymen's Association of Wisconsin as traveling cheese instructor. As an institute worker he is well known to Wisconsin farmers, having taken a very prominent part in the institutes for many years.

Professor Noyes has established a high reputation for himself and is now regarded as one of the leading men in the butter and cheese business in the entire country. His products always command fancy prices. The past season he received first premium on cheese at the Wisconsin State Fair. He holds the silver cup for the best cheese at the meeting of the Wisconsin Dairymen's Association, held last winter at New London, also gold and silver medals awarded by the Wisconsin Cheese Makers' Association, in 1894 and 1895.

The Ohio State University is to be congratulated on being able to secure the services of such an able man to take charge of the instruction in the dairy school. His many years of experience in teaching, and his marked success as a practical butter and cheese maker, together with his wide knowledge and interest in dairy matters fit him admirably for the position to which he has been elected.

The Dairy School at the Ohio State

University is equipped for practical instruction in butter and cheese making, and with the addition of Professor Noyes to the teaching force, the standing of the school is placed on a level with the very best in the country. The term opens January 8, and closes March 27, 1896. Young men who are interested in dairying should not fail to make inquiries concerning this school, with a view to attending, if possible.

METHODS OF INSTRUCTION

In Horticulture—Extract from Lecture by Prof. William R. Lazenby, M. Agr., Before the Association of American Colleges and Experiment Stations, Held at Denver During July, 1895.

It may be thought by some that the demand for horticultural education and training is not sufficient to give it an extended place in the curriculum of our Land Grant Colleges. It should be remembered that while Horticulture is one of the youngest, it is one of the most rapidly developing arts in this country. The fruit interests alone of States like California, New York, Ohio, Michigan, and others are great and constantly growing.

The forcing of winter vegetables and the cultivation of the finer products of the garden are rapidly extending and are becoming more and more profitable. Commercial Horticulture is developing with marvelous rapidity and bids fair to soon become one of the most important branches of Horticulture.

According to the census of 1890, the annual product from the business is over \$25,000,000. The Society of American Florists, one of the strongest distinctively horticultural organi-

zations in this country, has for years persistently urged the importance, the necessity, of a school or department of Floriculture. It is doubtful if there is any industry of equal extent and usefulness so entirely wanting in opportunity for advanced study and scientific training. With the exception of the Shaw Botanic Garden, and there the number of students is limited to six or eight, there is no place where the practical florist can turn for guidance and instruction. Letters have been received the past year, which testify that young men and young women are looking toward Floriculture as a vocation which offers many and signal advantages. It is an industry especially adapted to women, and several thousand are already engaged in it. We should also realize that a general home interest in flowers and ornamental gardening is rapidly developing.

It will thus be seen that broad and liberal horticultural instruction embraces many different divisions and our departments of Horticulture should be prepared to meet the growing demands.

One very essential feature in the way of needful preparation is a better material equipment. It is possible that this department in a few highly favored institutions like Cornell, the University of Wisconsin, the Agricultural College of Michigan, and perhaps one or two others, have all that could be reasonably expected or even wisely desired. But I am quite sure this is not the situation in many other Land Grant Colleges. Some, I am pleased to say, have fairly good facilities for teaching and illustrating pomology, small fruit culture and vegetable gardening. But how many have well equipped divisions in Floriculture, Landscape Gardening or Forestry. Without the proper equipment but little can be done along these lines, yet their importance can scarcely be overrated.

Although the opportunities for studying Horticulture in its various branches are better than ever before, the appropriations for the use of these departments in our various colleges have been, as a rule, wholly inadequate for anything like good equipment and broad, progressive work.

Under reasonably good management a College or University advances and prospers just about in proportion to the means at its disposal. Its progress depends mainly upon the capital it can command. If this be true of the College and University as a whole, it is no less true of each particular department.

If one department has two or three times the means at its command that another has, it ought to develop or advance twice or thrice as fast. Though it may require more to equip one department than to equip with equal completeness another, there is less difference than may appear at first sight. The actual difference in requirements in the different technical departments is comparatively slight.

We urge upon those connected with horticultural departments to demand large things for Horticulture. We have a right to so demand. Education by the State is something more than a business enterprise or mere commercial speculation. True education is based upon philanthropy. It is the duty of the State to provide and extend it; to furnish the education adapted to the needs of our citizens, be the demand great or small. The cultivators of the soil outnumber all other classes of our population. Never before in the history of our country have so many small holdings of land been used to such advantage. In these times of business depression, many are anxiously seeking for instruction in the various branches of Horticulture. Institutions founded for the special purpose of providing the

industrial classes a liberal and practical education in the various pursuits and professions of life ought not to neglect those which engage so large a number of our citizens.

It is true that many who desire this education cannot come to our colleges and universities. Fortunately the whole tendency of modern educational methods is towards bringing the results of education and training before the whole people.

Our mission as teachers of Horticulture is first to teach those who come and join our classes, and second to give as much instruction as possible away from the college, choosing those places where special needs exist. What do the people of my State most need to know in the way of horticultural instruction is a question we should keep constantly before us.

We can and should do some good missionary work at our Farmers' Institutes through our state and county horticultural societies, and by University extension methods. No class or part of our population is giving more earnest, original thought to the different economic problems connected with the successful cultivation of the soil than are the horticulturists of our country, and no class is more eager to receive the instruction and inspiration of science.

Agricultural Schools and Experiment Stations.

The year book of the Department of Agriculture contains an extended review of the present status of agricultural education and investigation in the United States.

Under the provisions of the acts of Congress of July 2, 1862, and August 30th, 1890, 65 institutions are in operation in the several States and Territories. Of these, about 60 institutions maintain courses in agriculture. In 14 States separate institutions are maintained for white and colored

students. Special courses in dairying and in other agricultural industries have been recently established at a few of the colleges. The total number of officers in the faculties of the colleges having courses in agriculture in 1894 is 1,643, and the total number of students is 21,195, of whom 3,847 are in the courses in agriculture.

Agricultural experiment stations are now in operation under the act of Congress of March 2, 1887, in all the States and Territories. Alaska is the only one section of the United States which has no experiment station. Excluding branch stations, the total number of stations in the United States is 55. The total income of the stations during 1894 was \$996,157. The stations employ 577 persons in the work of administration and inquiry. A wide range of scientific research is now being conducted in the laboratory and plant house, and an equally large amount of practical experimenting in the field, the orchard, the stable, and the dairy. Thirty stations are studying problems relating to meteorology and climatic conditions. Forty-three stations are at work upon the soil, investigating its geology, physics, or chemistry, or conducting soil tests with fertilizers or in other ways. Twenty stations are studying questions relating to drainage or irrigation. Forty-eight stations are studying the more important crops, either with regard to their composition, nutritive value, methods of manuring and cultivation, and the best varieties adapted to individual localities, or with reference to systems of rotation. Thirty-five stations are investigating the composition of feeding stuffs. Twenty-five stations are dealing with questions relating to silos and silage. Thirty-seven stations are conducting feeding experiments for milk, beef, mutton, or pork, or are studying different methods of feeding. Thirty-two stations are investigating subjects relating to dairying, includ-

ing the chemistry and bacteria of milk, creaming, butter making, or the construction and management of creameries. Forty-five stations are studying methods of analysis or doing other chemical work. Botanical studies receive attention at twenty-seven stations. Forty-three stations work to a greater or less extent in horticulture, testing varieties of vegetable and fruits, and making studies in varietal improvement and synonymy. There are now some 320 experiment stations in operation in the different countries of the world.

The Corn Root Worm.

New localities for insect pests are continually being reported. Not long since, Professor Kellicott reported the appearance of the clover leaf beetle, *Phytonomus punctatus*, and the clover root borer, *Hylesinus trifolii*, in the vicinity of Columbus.

At this time we have the opportunity of reporting the corn root worm, *Diabrotica longicornis*, as a species included within our fauna. This insect has been destructive in cornfields in Illinois and other western States for more than a score of years. It has been working gradually eastward, and was first reported from western Ohio about two years ago. This fall it was collected at Blendon, a few miles east of Columbus.

Just from what direction it has come to us I am unable to say, but we are sure it is here, and the sooner agriculturists make themselves acquainted with its life history, the easier the task of controlling its ravages.

The adult beetles lay their eggs beneath the surface of the ground, near the roots of corn, in the fall. These remain in place until spring, when they hatch, and the larvæ attack the roots of the corn that comes up for the next crop.

It has been observed that this is

truly a corn insect, never molesting other crops with the exception, perhaps, of sorghum, broom corn and some of their very near relatives. So, if instead of planting corn on the same ground two or more years in succession, wheat or oats are sown, the larvæ are not furnished with food, and consequently must perish.

I think that with proper care in rotating crops, this pest may not become so destructive here as in some part of the West.

JAMES S. HINE.

THE HESSIAN FLY.

An Interesting Account by Prof. D. S. Kellicott, Department of Zoology and Entomology.

This major pest of growing wheat has had a rival of the first order the past season in some parts of Central Ohio. Prairie conditions as to moisture have favored that well known prairie insect, the chinch bug, and it has suddenly come into prominence in Ohio and for the first time, in this vicinity, it has united with the Hessian fly in reducing the yield and lowering the quality of wheat. The fly is credited with doing serious damage in 1895, and doubtless it did much that was attributed to other causes. Indeed it was generally overlooked or seen only in its usual limited numbers until the wheat was well advanced in May. At this time the sickly plants and breaking down of others more vigorous pointed unmistakably to the cause, the canker that was working at its vitals—the larvæ of the Hessian fly.

It has long been the custom to sow wheat late when there was danger from this insect. In that case the wheat plants are supposed not to get started before the egg-laying flies have passed away. But the fields under observation by the writer were sown late and yet were badly infested.

Why? Was it due to warm weather, which lasted unusually late in 1894? This would appear to be a plausible answer. Still, observations this season indicate another explanation. Just now, first week in November, there are no signs of the fly in the fields of wheat which are just up, but in the self sown wheat in the fields harvested in June last, there is an abundance of the destroyer—the larvæ in different stages and the flaxseed. No flies appear to have escaped from this brood, and it is apparent that these will hibernate in this escaped wheat; in the spring the fly will escape and lay eggs in the adjacent fields of wheat. They would appear to explain why and how the late sown wheat was destructively attacked this year, and that the same probably will happen to the crop now growing for the harvest next June. It would seem rational treatment to plow under the escaped wheat containing the maggots where practicable this fall.

Encouraging Forest-Tree Culture.

There are five principal reasons why we should encourage the growth of forest trees: First, for the use of lumber in building purposes. Secondly, for fuel, charcoal, etc. Thirdly, for protection against storm and strong winds. Fourthly, for the beauty in ornamenting parks and public places of interest, and for shade also; and fifthly, their good effect on the climate, principally on the rain fall. This last is probably of greater importance than is generally believed by the people, and on which I want to make the subject of this article. Trees act as pumps on the soil where they grow. This has been thoroughly tested, and is no more a question among investigators. I will give a few figures from the results of investigators which will illustrate this fact.

Professor Gray from one of the eastern colleges estimated that a tree would transpire about five pounds of

water per year from each square foot of leaf surface. The tree which he studied had a leaf surface equal to 200,000 square feet, it would therefore transpire 1,000,000 pounds of water a year. This was, however, an exceptionally large tree. Pfaff in Germany, studied a tree and found it to have 700,000 leaves, and transpired 264,000 pounds of water during the growing season. Vaillant observed that an oak tree sixty-nine feet high, eight feet in circumference three feet from the ground, transpired on a hot summer day 4,400 pounds of water. There are many other records equally striking, but these that I have given will give you some idea as to the amount of water trees do pump out of the soil. We can prove it to our own satisfaction by digging up the soil in a woods where many large trees grow, the soil will be dry almost without moisture, and that, too, not long after a rain. Clay soils are often found to become wet and swampy after the trees are removed.

The water is taken up by the roots of the trees, and it passes up through the trunk and is exhaled by the leaves. Many of the roots of large trees extend many feet below the surface of the earth, where they absorb the water and bring it up to the surface, where it is exhaled as water vapor. When the air gets saturated with this water vapor and has the right conditions, it again condenses and falls to the surface of the earth as rain. But if we should lack these great pumps, namely, the trees, the water would remain in the depths of the earth, where it would be of no use for any purpose. To strengthen this argument I will call your attention to countries which lie near large bodies of water; there you find that plenty of rain falls during the year, because the water as it evaporates from the surface of the large bodies of water is carried to the land, where it condenses and drops as rain. But on the other

hand, if you notice inland countries, you will find that as the forest trees are removed, the rain-fall during the growing season decreases each year, as a result due to the destruction of our woodlands.

P. L. PFARR.

Winter Dairying.

Many more of our dairymen might safely embark in what is known as winter dairying. The majority had better continue summer dairying. There are only a few of the common farmers' stables that are fit to keep a cow in as close confinement as winter dairying generally necessitates. A few of our best dairymen say that all the exercise a dairy cow needs is what she can get in the pasture during four months of the year, and at the end of a common crotched chain tie the other eight months. We find a few dairymen trying this form of exercise in their low, dark, poorly ventilated stables. They seem to have forgotten that nature has furnished sunlight and pure air to be used. The fruits of the practice have begun to ripen. Each generation of the cattle is less able to withstand the diseases which are becoming more and more prevalent.

One of the eastern agricultural colleges wishing to build up a herd of robust dairy cattle, went to northern Dakota to get the foundation, simply because they could not trust the cattle from those great and noted herds of the east where close confinement has been practiced. These men were willing to sacrifice the advantages of years of careful breeding and selection in order to get robust cows. These cows have been put in a well ventilated and well lighted stable. If those high bred cows had had such care from the beginning, our sister college would have been able to have taken advantage of all that there is in years of experience.

It seems that there is a practical lesson to be drawn from the above. Let us take advantage of the mistakes of others, and before commencing practice that confines our cattle, let us get the stables in shape for the proper care and comfort of the good old cow. We want to change from summer dairying because of better prices of butter at that time, but we must remember that good prices go only with good product, and that a good product can not be taken from diseased stables.

Rusts of the Cereals—Interesting Results of Investigations Reported From Europe.

BY PROFESSOR KELLERMAN.

It would hardly be supposed that such well-known fungi as the three common rusts of wheat, oats and other grasses, studied for many years, could be misunderstood. Yet from studies with extensive material by Jakob Eriksson and Ernst Henning, it seems that several species have been confounded and designated by one and the same name.

They have found that the old *Puccinia graminis* contains two species. One of them whose æcidial form is found on *Berberis* (barbary) retains the old name. Its *Uredo* (red-rust) or summer-spore stage, and its teleutosporic stage (black-rust) occur in 106 species of grasses. Eriksson and Henning have found that the *Uredo*-spores in nearly all cases lose their germinating power before the winter closes. The winter spores (black-rust) will not germinate in the fall, but later in the season they will grow, reaching their optimum for germination during April, May and June. This is true however only when the spores have been exposed to wind and weather during the winter. If kept in a room either hot or cold they will not germinate. Infection experiments

showed that there are *special forms*, for example one that lives on rye, barley and wheat, another that lives on oats. That which infects the first-named hosts will not grow on the last-named and *vice versa*, the form inhabiting the oats will not grow on the other hosts.

The other species confounded with *Puccinia graminis* is a hitherto undescribed one, and has been named *Puccinia phlei-pratensis*. It has no æcidial form. Its mycelium (vegetative filaments within the host) are perennial and again in May produce uredospores.

The old species *Puccinia rubigovera* consists of three species. The first, which they call "yellow-rust," (*P. glumarum*) seems to have no æcidium. But it has well marked forms peculiar each to the barley, wheat and rye. The uredo spores germinate sparingly, better apparently after exposure to frost. The second species, called "brown-rust" (*P. dispersa*), has its æcidial stage on *Anchusa*, a borage-wort; it infects eleven species of grasses. As in some of the preceding species, so here there are forms peculiar to particular hosts as that on rye and that on wheat. The telento-spores (winter-spores) will germinate in the autumn; the same is true of the last mentioned species. The third form, called "dwarf-rust" (*P. simplex*), is characterized by its very small fruit-dots or sori (cluster of spores). Its æcidium is wanting or unknown.

The old species *Puccinia coronata* had been previously found to contain two distinct species. One retains the old name *P. coronata*. Its æcidium occurs on *trangula oluns*. The other species has been named *P. Coronifera*. This has its æcidial form on *Rhamnus cathartica*.

The three species *Puccinia Graminis*, *Puccinia rubigo-vera*, and *Puccinia coronata* have long been recognized in this country, infecting wheat,

oats, rye and many other grasses, doing as every one knows an enormous amount of damage. But they have not been studied in the light of the above investigations.

CORTUS PEYTON,

OR

How He Succeeded!

"Hold on a minute, Lotus, I want to see Mr. Peyton a moment, and then I will be ready." Jasper drew up rein to wait on his neighbor, George Barcus, who was going to ride out home with him. These two men had always lived in the same neighborhood, and had adjoining farms, and were in every respect average and respected farmers in central Ohio. It was a drizzly, wintry day in December. These two farmers had spent the Saturday afternoon in the village in doing their weekly shopping, and going to the postoffice and attending to their little matters of business.

It was but a short time until Barcus had left Mr. Peyton and was seated in the old spring wagon on the way home. It was not unnatural that their conversation should drift to Cortus Peyton, for he was the most successful and well known man of the neighborhood.

"Do you know, Lotus, that I believe that Peyton is the most extraordinary man that I ever heard of or saw. Why, he can raise corn without rain, potatoes without the bugs botherin' 'em, and his cattle are the biggest and best I ever seen."

"Well, it's true, and as sure as my name is George Barcus, I never seen the like, either. He's the wonder of this section around here. When he took charge of that old Jacob's farm it wasn't worth anything, no fences, and just an old house and corn crib, and land so poor—why, you remember that year that young Amos Clark put out that field by the road in wheat, he only got eight bushels to the acre, and

just this fall, young Peyton threshed 546 bushels from them fourteen acres, and besides all his book farming he just cleared out all the prizes at our fair this year, and then just look at his home, ain't it a grand place? It has been only about fifteen years since he moved on that old farm, now he has everything fixed up new and fine—new house and barn, and all that fencing—my, just think how things have changed!"

"And his family, too," broke in Jasper, "those bright looking boys and cheery little Margery of ten years, why Cortus himself says that he is the happiest man in the world."

So these two men talked on in most esteeming words of the man who was, unconsciously to them, their hero. So interesting had been their conversation that they did not realize they were so near home until the old horse turned in the lane. Here the two men parted, and each went his way, but still thinking of the man who had so completely revolutionized things in that district.

(To be continued.)

The Perfect Apple.

One of the subjects discussed at the last meeting of the Columbus Horticultural Society was: "What constitutes an ideal apple?" Not to mention productiveness, hardiness and vigor, the qualities which appear to be in demand, for an ideal apple, are the following:

- (1.) Richness (i. e., a large amount and the proper proportion of sugar and acid).
- (2.) A good color.
- (3.) A medium, uniform size.
- (4.) A good shape.
- (5.) Flesh firm, yet tender and melting.
- (6.) A good flavor.
- (7.) A thin and smooth, but tough skin.
- (8.) A small core and few seeds.

- (9.) Evenness of maturity.
- (10.) Firm adherence to tree.
- (11.) Good cooking qualities.
- (12.) Good keeping qualities.

MR. E. J. RIGGS, '95, of the course in Horticulture and Forestry, exhibited a seedling apple grown on his father's farm in Gallia Co., at the last meeting of the Columbus Horticultural Society. The specimens were of good size and shape and most beautifully colored. The quality, however, is not equal to that of our standard varieties.

THE Ohio State Board of Agriculture has appointed two of the recent graduates of the Agricultural Department as lecturers at the coming Farmers' Institutes.

This is a deserved compliment to the School of Agriculture.

WALTER FISHER, a senior in the course in Horticulture and Forestry, who is making a specialty of the study of Arboriculture, has recently discovered a new species of oak in this locality. This tree is very rare, there being only two or three specimens known in the State. The variety is commonly known as Lea's oak, and is generally believed to be a hybrid between the laurel oak and the scarlet oak.

MOSES CRAIG, who graduated in the course in Science with the class of '89, and then took an advanced degree at Cornell, has applied for a post graduate course in Horticulture and Forestry. Mr. Craig has held the position of Professor of Botany in the Oregon Agricultural College during the past four years. He is now studying the horticulture of the Pacific Coast at the University of California.

Authors Wanting Books Printed should write us for Suggestions and Estimates. Books and Catalogues a specialty. References Exchanged. We also give special attention to . . .

FINE CATALOGUES and
ENGRAVED WEDDING GOODS,
CALLING CARDS, ETC. . . .

Call and see Samples at our office, on ground floor, 108 NORTH HIGH STREET, COLUMBUS, OHIO.

Hann & Adair.

PROF. S. P. TILLEY,
 TEACHER OF

Dancing, Deportment,
And PHYSICAL CULTURE.

Academy, S. E. Cor. Gay and High Street.
 Residence, 1352 Hunter Street.

Private instruction given during the day in all the late Society Dances.

New classes will be opened Wednesday and Thursday.

GENTS, \$6.00 PER TERM. 12 LESSONS.
LADIES, \$4.00 PER TERM, 12 LESSONS.

A. REIMBOLD,
 250 S. High Street.

Fine Tailoring.

CLEANING and REPAIRING A SPECIALTY.

COLUMBUS, - - OHIO.

